1/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--ENERGY BAND STRUCTURE OF TERNARY DIAMOND LIKE A PRIME2 B PRIME4 C PRIME5 SUB2 TYPE SEMICONDUCTORS -U-

AUTHOR-(04)-GORYUNOVA, N.A., POPLAVNOI, A.S., POLYGALOV, YU.I., CHALOYSHEV, V.A.

COUNTRY OF INFO--USSR

SOURCE--PHYSICA STATUS SOLIDI, 1970, VOL 39, NR 1, PP 9-17

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ENERGY BAND STRUCTURE, SEMICONDUCTOR MATERIAL, SEMICONDUCTOR DEVICE, DIAMOND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/1731 STEP NO--GE/0030/70/039/001/0009/0017

CIRC ACCESSION NO--AP0112723

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0112723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN SUMMARY, THE CALCULATIONS OF THE BAND STRUCTURE PARAMETERS AND THE COMPARISON WITH THE EXPERIMENTAL DATA HAVE SHOWN THAT IN THE COMPOUNDS OF THE A PRIME2 B PRIME4 C PRIME5 SUB2 TYPE A COMPLICATED CONDUCTION BAND STRUCTURE EXISTS (FOR EXAMPLE, IN ZNGEP SUB2, ZNSIAS SUB2, CDSIP SUB2). IN PAPER (37) THE INFLUENCE OF THIS STRUCTURE ON THE PHYSICAL PROPERTIES HAS BEEN ALREADY DISCUSSED. THE CALCULATIONS HAVE SHOWN THAT IN ALL COMPOUNDS THE TOP OF THE VALENCE BAND CORRESPONDS TO THE T SUB4 REPRESENTATION (LIGHT HOLES). HOWEVER, IN THE CASES WHEN DELTA SUBER IS SMALL THIS RESULT CANNOT BE CONSIDERED AS UNAMBIGUOUS, AND T SUB5 (HEAVY HOLES) CAN LIE HIGHER THAN T SUB4, WHICH IS JUST OBSERVED IN A NUMBER OF EXPERIMENTS. THE COMPLICATED BAND STRUCTURE AND A VARIETY OF ITS PARAMETERS PERMIT TO THINK THAT THE TERNARY A PRIME2 B PRIME4 C PRIME5 SUB2 COMPOUNDS WILL PROVE TO BE SUITABLE MATERIALS FOR CREATING NEW SEMICONDUCTOR DEVICES WITH A WIDE RANGE OF PROPERTIES. IT IS HOPED THAT THE RESULTS GIVEN IN THIS WORK WILL AID IN A BETTER UNDERSTANDING OF EXPERIMENTS AND WILL HELP TO APPRECIATE CLEARLY POSSIBLE DIRECTIONS OF FURTHER INVESTIGATIONS. FACILITY: A. F. IOFFE PHYSICO-TECHNICAL INSTITUTE, ACADEMY OF SCIENCES OF THE USSR, LENINGRAD. FACILITY: V. D. KUZNETSOV SIBERIAN PHYSICO-TECHNICAL INSTITUTE, TOMSK.

UNCLASSIFIED

1/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--ON SOME PROPERTIES OF CDSNP SUB2 IN STRONG ELECTRIC FIELD -U-

AUTHOR-(05)-GORYUNOVA, N.A., LEONOV, E.I., ORLOV, V.M., RODIONOV, A.F., SOKOLOVA, V.I.
COUNTRY OF INFO--USSR

SOURCE--PHYS. LETTERS, NETHERLANDS, VOL. 3 IA, NO. 7, P. 393-4, 16 APRIL 1970
DATE PUBLISHED-------7Q

SUBJECT AREAS--PHYSICS

TOPIC TAGS--PHOSPHIDE, CADMIUM COMPOUND, TIN COMPOUND, HIGH FREQUENCY CURRENT, OSCILLATION, ELECTRIC FIELD

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1992/0441 STEP NO--NE/0000/70/031/007/0393/0394

CIRC ACCESSION NO--AP0111634

UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--23OCT70
CIRC ACCESSION NO--AP0111634
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HIGH FREQUENCY CURRENT OSCILLATIONS IN A NEW TERNARY SEMICONDUCTING COMPOUND HAVE BEEN PREDICTED THEORETICALLY AND OBSERVED EXPERIMENTALLY. FACILITY: ACADEMY SCI. USSR, LENINGRAD.

UNCLASSIFIED

USSR UDC: 582.26

GORYUNOVA, S.V., PUSHEVA, M.A., and GERASIMENKO, L.M., Institute of Microbiology, Academy of Sciences USSR

"The Effect of a Sulfur-Containing Nucleotide Peptide on the Life Cycles of a Synchronous Chlorella vulgaris Culture"

Moscow, Doklady Akademii SSSR, Vol 190, No 2, 1970, pp 455-457

Abstract: In an earlier work using electrophoresis and paper chromatography the authors isolated a sulfur-containing polynucleotide peptide complex from cells of a synchronous Chlorella vulgaris culture and found that the nucleotide part consisted of four nucleotides characteristic of RNA, while the peptide part included cystine, lysine, arginine, aspartic acid, glycine, glutamic acid, and unidentified compounds. In the present study, anion-exchange chromatography revealed that the sulfur-containing nucleotide peptide was a complex compound that broke down into several fractions, of which only one, No 28, was biologically active. Fraction 28 contained the nucleotide peptide and differed from the other fractions in its ultraviolet absorption spectrum. Addition to the culture of individual constituents of the compound (RNA hydrolysate and various amino acids) stimulated cell growth, but to a lesser degree than did the complex as a whole, and had no effect on the time of the life cycle.

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1/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ROLE OF A SULFUR CONTAINING POLYNUCLEOTIDE PEPTIDE COMPLEX IN CELL DIVISION IN CHLORELLA VULGARIS -U-

AUTHOR-(03)-GORYUNOVA, S.V., PUSHEVA, M.A., GERASIMENKO, L.M.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(4), 966-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CHLORELLA, SULFUR COMPOUND, PEPTIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1994/0434 STEP NO--UR/0020/70/190/004/0966/0968

CIRC ACCESSION NO--AT0114714

UNCLASSIFIED

2/2 013 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AT0114714

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ISOLATED S CONTG. POLYNUCLEOTIDE PEPTIDE COMPLEX (S-NP) STIMULATED C. VULGARIS GENERATION AND CELLULAR DIVISION (SPORULATION) AND INCREASED THE NO. OF AUTOSPORES FORMING, INDICATING A DIRECT ROLE OF THE S-NP IN PROCESSES LEADING TO CELL NUCLEUS DIVISION. FACILITY: INST. MIKROBIOL., MOSCOW, USSR.

UNCLASSIFIED

GORYUNOVA, T. I.

Space medicine

SO:JPRS 53801
12 Aug 71

UDC 612.766.1.014.477-064(047)

MAN'S PERFORMANCE DURING WEIGHTLESSNESS

[Article by A. A. Korobova and T. I. Goryunova (first name illegible), Moscow; Kosmicheskaya Biologiya i Meditsina, Vol 3, No 3, 1969, pp 3-11, submitted 23 May 1969]

Ten years ago, in generalizing the materials from a symposium on weightlessness of the American Astronautical Society, Benedict (1964) wrote that the world literature includes no books devoted to weightlessness. The literature now includes numerous studies, for the most part by Soviet and American scientists, devoted to the physical-technical and biomedical aspects of weightlessness.

The need for examining the status of study of the coordination of movements as functions of the osteomuscular system and overall performance determined the content of this review.

Analysis of the literature for 1967-1968 concerning study of the efficiency of physical work of different complexity under space conditions and when modeling some physiological effects of weightlessness shows that this problem remains timely. This is indicated by the great number of studies published in the journal Aerospace Medicine, the involvement of a number of neurophysiologists and specialists in the sports field in solution of these problems, and finally, publication of a special program for the study of prolonged adaptation to weightlessness in the first number of the new journal Space Life Sciences (Bushy, 1968).

The appearance of a large number of studies on performance (capacity for prolonged performance of professional tasks associated with physical and psychic stress of different degrees), the execution of motor skills, and training under weightlessness and subgravity conditions (see the review by Wortz, 1968) in the United States should also be noted.

Nature of impairments in coordination of movements. Brief exposure to weightlessness (Gerathewohl and Ward, 1960; Chiles, et al., 1968; M. A. Cherepakhin, 1963, et al.) did not make it possible to give a full evaluation of shifts in the state of man's motor function.

USSR UDC 621.396.6-181.5

GORYUSHKIN, M. I., KRYLOVA, I. A., PETIN, Yu. A., SEMENOVA, N. Y., USTILKO, V. Ye.

"Combining MOS and Bipolar Transistors in Integrated Circuits"

Elektron. tekhnika, Nauch.-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific and Technical Collection. Microelectronics), 1971, vyp. 1(27), pp 33-38 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8V246)

Translation: The authors consider the possibilities of developing combination integrated elements based on MOS and bipolar transistors. Circuit characteristics may be appreciably improved by combining these devices in integrated circuits. The special technological characteristics of making integrated circuits combining MOS and bipolar transistors are described, and it is shown that the processes of making them are compatible. The characteristics of P-channel MOS and bipolar transistors are presented for units made under compatible conditions on N-type epitaxial films with insulating junctions. Resumé.

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USSR UDC 621.382.82

GORYUSHKIN, M. I., [illegible], V. V., [illegible], I. P., [illegible], V. V., PETIN, Yu. A., [illegible], N. V.

"Integrated Circuit of a Low-Frequency Amplifier Based on MOS Transistors"

Elektron. tekhnika. Nauch.-tekhn. sb. Mikroelektronika (Electronic Technology. Scientific and Technical Collection. Microelectronics), 1971, vyp. 1(27), pp 14-19 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8D91)

Translation: The paper describes integrated amplifiers with high input impedance which can be realized on the basis of MOS transistors which ensure high input impedance, temperature stability of high input impedance, high packing density and low power consumption. Resumé.

USSR

GARANINA, S. D., ZELENEV, YU. V., KOROLEV, A. YA., [illegible], All-Union Scientific Research Institute of Aviation Materials, Moscow, State Committee for Aviation Technology USSR

"Water Diffusion in Fiberglass Plastics"

Moscow, Kolloidnyy Zhurnal, Vol 32, No 4, Jul-Aug 70, pp 508-511

Abstract: The sorption method was used to study water diffusion in rebrand EDT-10-VO unidirectional winding epoxy fiberglass plastics in relation to the type of surface filler pretreatment, the direction of water molecule diffusion (along and across the fibers) and other factors. It was found that in the case of water penetration across the fibers the diffusion coefficient is lower than for solidified binder EDT-10, which indicates the absence of through pores in this direction. In the case of water penetration along the fibers the diffusion constant is almost two orders higher than across the fibers, which indicates the presence of a large number of microdefects in the plastic mainly in the boundary layer between the glass fiber and the polymer.

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USSR

GARANINA, S. D., et al., Kolloidnyy Zhurnal, Vol 32, No 4, Jul-Aug 70, pp 508-511

Boiling of specimens in water results in the formation of additional microdefects in this boundary layer, which results in a significant increase in the rate of water molecule diffusion. Pretreating the glass-fiber filler surface with chemically active substances (finishes) leads to a significant decrease in the water diffusion coefficient.

2/2

Inventions and Discoveries

USSR

UDC 615.472:615,847.8

SOLOV'YEVA, G. R., YEREMIN, V. A., and GORZON, R. R., All Union Scientific Research Institute of Medical Instrumentation Construction, Moscow

"Apparatus for Low-Frequency Magnetotherapy "Polyus-1"

Moscow, Meditsinskaya Tekhnika, No 5, Sep/Oct 73, pp 29-33

Abstract: An apparatus has been developed at the Scientific Research Institute of Medical Instrumentation Construction for producing non-contact action of a magnetic field. The instrument will be manufactured at the Electromedical Apparatus Plant (EMA). The advantage of this apparatus is that there are virtually no vibrational or heat side effects. It is designed for local application of a low-frequency magnetic field. A special inductor for gynecological application is available. Since the human body presents practically no barrier to the magnetic field, the air gap of a magnetic field may be used to calculate the depth of penetration of a patient. "Polyus-1" has been already successfully tested at several clinics.

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1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--DETERMINATION OF THE COORDINATES OF SOME GALACTIC SOURCES OF ANOMALOUSLY EXCITED HYDROXYL -U-

AUTHOR-(05)-BYSTROVA, N.V., GOSACHINSKIY, I.V., YEGOROVA, T.M., KARLOV, N.V., KRYNETSKIY, B.B.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(4), 791-4

DATE PUBLISHED-------70

SUBJECT AREAS--ASTRONOMY, ASTROPHYSICS

TOPIC TAGS--ASTRONOMIC OBSERVATORY, COORDINATE, GALAXY, GALACTIC RADIATION, HYDROXYL RADICAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3001/1573 STEP NO--UR/0020/70/191/004/0791/0794

CIRC ACCESSION NO--AT0127069

UNCLASSIFIED

2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0127069

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. RIGHT ASCENSIONS OF 4 SOURCES OF OH RADIATION WERE MEASURED IN 1969 IN THE MAIN ASTRONOMIC OBSERVATORY OF THE ACADEMY OF SCIENCES OF THE U.S.S.R. TWO SOURCES OF RADIATION, DETECTED IN 1968, CLOSELY COINCIDED WITH THE NMLCYG AND VYCMA OBJECTS. THE RADIOLINE OF OH IN THESE SOURCES HAD THE HIGHEST INTENSITY AT FREQUENCY OF 1612 MHZ AND ITS PROFILE WAS CHARACTERIZED BY THE PRESENCE OF 2 REGIONS OF RADIATION DIFFERING STRONGLY IN RADIAL VELOCITY. THIS CAN BE RELATED TO ROTATION, EXPANSION, OR COMPRESSION OF A GAS CLOUD. THE POSITION IN EACH RADIAL VELOCITY WAS MEASURED SEP.; RADIATION OF OH LINE WITH RADIAL VELOCITIES OF MINUS 24.2, 18.5, PLUS 21 KM, AND MINUS 10.5, MINUS 6.4, PLUS 45.5, PLUS 49.7, AND PLUS 52.8 KM PER SEC FOR NMLCYG AND VYCMA, RESP. OBSERVATION OF W49 AND SGR-B2 SOURCES WAS MADE AT 1655 MHZ. THE LINE OF OH RADIATION IN THE SGR-B2 SOURCE WAS MEASURED AT RADIAL VELOCITY OF PLUS 67.7 KM PER SEC. FACILITY: RYZHKOV, N. F., FIZ. INST. IM. LEBEDEVA, MOSCOW, USSR.

UNCLASSIFIED

Acc. Nr: AP0047227 Ref. Code: UR 0216

PRIMARY SOURCE: Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, 1970, Nr 1, pp 129-133

Murzakov, B. G.; Dragunov, S. S.; Gosgenkov, V. F.

APPLICATION OF THE PYROLYSIS — GAS CHROMATOGRAPHY TO THE INVESTIGATION OF THE CHEMICAL NATURE OF HUMIN ACIDS

Institute Microbiology, Academy of Sciences USSR

A microcell for pyrolysis of humin substances was constructed and suitable conditions for gasous-luquid chromatography were chosen for the study of aromatic components of the molecules of humin acids of chernzem, peat and podzol soils.

Humin acids pyrolysates of the soil investigated for the most part contain similar aromatic compounds.

The results have shown only a quantitative difference in the relative contents of the said compounds.

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REEL/FRAME
19790729

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Phytology

USSR

UDC 582.288:632.4

GOSHAYEV, D., All Union Scientific Research Institute of Plant Protection, Leningrad

"Reaction of the Medium (pH) and Fusarium Wilt of Fine-Fibered Cotton"

Leningrad, Mikologiya i Fitopatologiya, Vol 4, No 4, 1970, pp 301-303

Abstract: The pH of the medium affects Fusarium oxysporum f. vasinfectum, the agent of wilt of fine-fibered cotton varieties grown in the Murgab Oasis in Turkmenistan; the fungus, in turn, can alter the pH. In a liquid potato-glucose medium, the fungus grew at pH values ranging from 3.0 to 7.5. The greatest accumulation of dry mycelial mass occurred at pH 4.8 to 5.2. Mycelial growth was inhibited at pH values above 6.9. After 15 days' cultivation, however, the pH in all of the tests except those at pH 3.0 to 4.0 became weakly acid or neutral. Moreover, the medium regularly became alkaline at pH values up to 6.6 and acid at values of 6.9 and higher. This ability of F. oxysporum f. vasinfectum to alkalize an acid medium and acidify an alkaline medium reflects a capacity for adaptation that enables it to create favorable conditions for its development, thereby increasing the susceptibility of fine-fibered cotton to Fusarium wilt under conditions

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APPROVED FOR RELEASE: 09/01/2001 CIA-RDP86-00513R002201010014-0"

USSR

GOSHAYEV, D., Mikologiya i Fitopatologiya, Vol 4, No 4, 1970, pp 301-303

of a neutral or weakly alkaline medium such as prevails over much of the Murgab Oasis.

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UNCLASSIFIED PROCESSING DATE--17JUL70

TITLE--A COMPARATIVE STUDY OF HUMAN ALLERGIC ANTIBODIES IN THE PRAUSNITZ KUESTNER REACTION AND IN PASSIVE SENSITIZATION OF ISOLATED SMOOTH MUSCLE

AUTHOR--BERMONT, I., GOSHCHIN, I.S., POLNER, A.A., PORYADIN, G.V.

COUNTRY OF INFO--USSR

SOURCE--PATOLOGICHESKAYA FIZIOLOGIYA I EKSPERIMENTAL'NAYA TERAPIYA, 1970, VOL 14, NR 1, PP 49-53

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--ALLERGIC DISEASE, ANTIBODY, MEDICAL PATIENT, SMALL INTESTINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0602 STEP NO--UR/0396/70/014/001/0049/0053

CIRC ACCESSION NO--APO092064

UNCLASSIFIED

Acc. Nr: AP0052064 Ref. Code: UR0396

PRIMARY SOURCE: Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, 1970, Vol 14, Nr 1, pp 49-53

A COMPARATIVE STUDY OF HUMAN ALLERGIC ANTIBODIES IN THE PRAUSNITZ-KUESTNER REACTION AND IN PASSIVE SENSITIZATION OF ISOLATED SMOOTH MUSCLE ORGANS IN MAN

I. . Bermont, I. S. Geshchin, A. A. Polner, G. V. Poryadin

A comparative study of allergic antibodies of untreated patients sensitive to ambrosia was carried out by means of Prausnitz-Kustner reaction and by passive sensitization of isolated sections of the ileum. In the fractions of reaginic sera obtained by gel-filtration on Sephadex G-200 the skin-sensitizing activity and sensitizing activity to the small intestine were revealed in the same zone -- the ascending part of the second peak which contained γG-globulin and traces of γA-globulin. Exhaustion of both γA- and γG-globulin in reaginic sera reduced their skin-sensitizing activity and sensitizing activity to the small intestine. Heating of intestinal sections at 45 C for 15 minutes eliminated the possibility of subsequent sensitization of the intestine. Preliminary heating of isolated human skin at 60° C for 30 minutes depressed the fixation of skin-sensitizing antibodies on it.

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REEL/FRAME
19820602

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1/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

TITLE--SPECTRA OF SLOW NEUTRONS FROM A CONTINUOUS TANGENTIAL REACTOR

CHANNEL -U-

AUTHOR-(05)-GOSHCHITSKIY, B.N., GUSEV, V.V., KONSTANTINOV, L.V., KOROTOVSKIKH, P.M., SIDOROV, S.K.

COUNTRY OF INFO--USSR

SOURCE--AT. ENERG. 1970, 28(5), 425-6

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--SPECTRUM, SLOW NEUTRON, GRAPHITE, PLEXIGLASS, MAXWELL DISTRIBUTION, NEUTRON FLUX, NUCLEAR REACTOR/(U)IVV2 REACTOR

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/0584 STEP NO--UR/0089/70/028/005/0425/0426

CIRC ACCESSION NO--AP0137669

UNCLASSIFIED

2/2 036 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0137669

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE EFFECTIVENESS OF GRAPHITE AND PLEXIGLAS AS SCATTERERS FOR THE EXTN. OF SLOW N FROM A CONTINUOUS TANGENTIAL REACTOR CHANNEL WAS STUDIED BY OBTAINING ENERGY SPECTRA OF SLOW N FROM THE TANGENTIAL CHANNEL GEK-5 OF THE REACTOR IVV-2. THE N FLUX WAS MEASURED AS A FUNCTION OF THE N WAVELENGTH, THE LENGTH OF THE SCATTERER, AND THE ANGLE OF THE SCATTERER WITH RESPECT TO THE CHANNEL AXIS. THE SPECTRA ARE COMPARED WITH MAXWELL DISTRIBUTION CALCD. FOR T EQUALS 290DEGREESK. IN ALL CASES THE SPECTRA ARE DESCRIBED BY THE SAME ENERGY DISTRIBUTION. THE OBSD. WEAK ABSORPTION OF N IN THE PLEXIGLAS SCATTERER DID NOT AFFECT THE CHARACTER OF THE SPECTRUM, BUT SLIGHTLY DECREASES THE VALUE OF THE N FLUX FOR EACH ENERGY.

UNCLASSIFIED

Electromagnetic Wave Propagation

UDC: 621.391.812.7

USSR

GOSHDZHANOV, M., Physicotechnical Institute, Academy of Sciences of the Turkmen SSR

"Evaluation of the Effect of the Earth on Operation of a Phase Comparator"

Ashkhabad, Izvestiya Akademii Nauk Turkmenskoy SSR: Seriya Fiziko-Tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No 6, 1971, pp 36-43

Abstract: In measuring the fluctuations of phase difference in radio waves propagating in the turbulent atmospheric layer close to the ground, it becomes necessary to evaluate the "additional phase" which arises when radio waves propagate over the Earth. The author considers a phase comparator for determining electric lengths with an antenna having an aperture in the shape of a narrow rectangular slot. The mirror image method is used for determining the effect of the Earth on operation of such a comparator used to study fluctuations in phase difference of radio waves propagating close to the ground in the Fresnel diffraction zone. It is found that radio signals reflected from the surface of the ground have negligible effect on comparator operation under these conditions. Two figures, bibliography of four titles.

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UDC 621.391.812.7

USSR

GOSHDZHANOV, M.

"Estimating the Earth's Effect on the Operation of a Phase Comparator"

Izvestiya Akademii Nauk Turkmenskoy SSR Seriya Fiziko-tekhnicheskikh, Khimicheskikh i Geologicheskikh Nauk, No 6, 1971, pp 36-43

Abstract: The mirror image method considering the Earth to be located in the Fresnel diffraction zone was used to determine the Earth's effect on the operation of a phase comparator. The fields from an antenna in free space and the mirror image of the antenna are calculated. Expressions are derived for the total field about the Earth's surface equal to the sum of the field in free space and the reflected field. The concept of the "secondary phase" is introduced to consider the phase distortion of the field during propagation of the radio waves above the Earth's surface. The smallness of the calculated electric length fluctuations by comparison with the mean square value of the interference of the equipment itself provides a basis for considering that the Earth's effect on the operation of a phase comparator is negligibly small.

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UDC: 538.3

USSR

GOSHIN, G. G., AGEYEV, O. I.

"Out-of-Phase Excitation of a Radially Conducting Cone"

Moscow, Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 7-14

Abstract: Excitation of a radially conducting conical surface by a ring of δ-oscillators is considered. The Kontorovich--Lebedev integral transforms are used to find a strict solution for the problem of out-of-phase excitation. It is shown that the spectrum of the excited waves consists of a circularly polarized TEM wave and a set of elliptically polarized TM waves. If the excitation is from sources located close to the vertex of the cone, then the amplitude of the TEM wave is considerably greater than the amplitudes of the TM waves. shifting the sources increases the amplitudes of the TM waves, and standing waves are set up between the vertex and the sources, leading to depolarization and frequency dependence of the fields. Simple formulas are derived in the TEM ap-

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USSR

GOSHIN, G. G., AGEYEV, O. I., Radiotekhnika i Elektronika, Vol 17, No 1, Jan 72, pp 7-14

proximation for calculating the components of the fields, the distribution of the current, and the energy flux. These formulas show in particular that the maximum energy flux is always directed along the surface of the cone. Numerical data are presented for a radially conducting plane. In this case the modulus and phase of the electric current density are calculated as well as the energy flux in the long-range zone in two mutually orthogonal planes. Three figures, bibliography of twelve titles.

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USSR

UDC 632.95.028

BURYY, V. S., GOSHKA, A. T., KUDEVICH, S. N., SANNIKOV, G. P., and GUBAREVA, K. P., All Union Scientific Research Institute of Hygiene and Toxicology of Pesticides, Polymers, and Plastic Masses, and Northern Scientific Research Institute of the Hydrotechnology and Development

"Residues of Herbicides Used in Clearance of Canals Found in Outside Environment"

Moscow, Khimiya, s Sel'skom Khozyaystve, Vol 10, No 9 (119), 1973, pp 48-54

Abstract: Canal characteristics are reported and the effectiveness of granulated herbicides monuron, diuron, and symazine against water plants. The residue of these preparations was studied in water and in soil at various distances from the site of introduction, as well as in plants and fish. It has been established that monuron is the most promising herbicide for the utilization in the zone of non-black soil considering the aspects of the sanitation-hygienic evaluation and the phytotoxic properties.

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UDC 615.917

USSR

GOSHKA, A. T.

"Some Data on the Normalization of Herbane in Objects of the External Environment"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Hygiene of the Application and Toxicology of Pesticides and the Clinical Aspects of Poisoning -- collection of works), vyp. 9, Kiev, 1971, pp 234-237 (from RZh-Farmakologiya. Khimioterapevticheskiye sredstva. Toksikologiya, No 2, Feb 72, Abstract No 2.54.607)

Translation: The tubers of 12 specimens of potatoes treated in the preSprout period with herbane [I; N-(tetrahydrobicyclopentadienyl)-N',N'-dimethylurea; a herbicide] calculated at 2-6 kg/hectare did not contain residual amounts of I. In the water of laboratory reservoirs in 10 days, the amount of I decreased by 20%, and on the 30th day, by 50% of that introduced. No significant effect of I on the biochemical processes of the water environment was discovered for a concentration of 0.5-5 mg/liter. In the rats after intraventricular injection of I over a period of 3 and 6 months in doses of 0.1, 1 and 10 mg/kg by the isotopic indication method (I^{131}; 1 mcurie p/k) an increase in the function of the thyroid gland was noted. An amount of 0.1 mg/kg was taken as the threshold dose of I.

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USSR

UDC 665.55

ISHCHUK, YU. L., SOKOLOVA, T. G., SINITSIN, V. V., and GOSHKO, N. S.,

"The Effect of Viscosity and the Degree of Purification of a Dispersion Medium on the Properties of Complex Calcium Lubricants"

Kiev, Neftyanaya i Gazovaya Promyshlennost', No 6, Nov-Dec 70, pp 37-39

Abstract: The viscosity of dispersion medium and the extent to which heavy aromatic materials have been removed from it have practically no effect on the stability of KCa-lubricants; presence of resinous materials lowers their stability. The effective viscosity of KCa-lubricants in positive temperature range drops with increased degree of oil purity and is hardly affected by the dispersion medium. Resinous substances lower the condensing action of the complex calcium soap. Changing the viscosity of dispersion medium or its purity exhibits no effect on the compressibility of oil from KCa-lubricant. Lubricants made of highly purified oils tend to harden at high temperatures. In general the use of high purity distillation oils lowers the mechanical stability of KCa-lubricants.

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USSR UDC: 621.397.332

BAUZHIS, A. V., GOSHTAUTAS, G. P., ZHLABIS, S. B.

"An Output Line-Scanning Transformer"

USSR Author's Certificate No 278734, filed 5 May 69, published 3 Dec 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6G167 P)

Translation: An output line-scanning transformer is proposed which contains a Π-shaped ferrite core with potted anode and high-voltage windings placed on opposite legs of the core. To reduce electric field strength between the windings, they are interconnected by a bridge of insulating material.

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USSR

UDC 536.46

GOSMINTSEV, Yu. A., SUKHANOV, L. A., POMIL, P. F., Moscow

"The Theory of Unstable Combustion of Powder. Combustion with Harmonically Changing Pressure"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 5, 1971, pp 60-69.

ABSTRACT: It is demonstrated that in order to construct a theory of the unstable burning of a powder, it is necessary to know the stable depegdences of combustion rate u_0, surface temperature T_s and flame temperature T_F on external parameters and initial powder temperature. Processes of combustion in an unlimited volume are studied within the framework of the theory, when one of the external parameters changes harmonically.

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GOSPODAREVSKIY, V. V.

JPRS 57068
6-73

2

XIV-9. EFFECT OF ADMIXTURES ON THE STRUCTURE AND HABITUS OF FILAMENTARY CRYSTALS OF SILICON GROWN BY THE METHOD OF GAS TRANSPORT REACTIONS

[Article by V. V. Gospodarevskiy, I. N. Bogoyavlenskaya, L'vov; Novosibirsk, III Simpozium po Protsessam Rosta i Sinteza Poluprovodnikovykh Kristallov i Plenok, Russian, 12-17 June 1972, p 201]

On the basis of studying the morphology of the facets of filamentary silicon crystals grown from the gas phase, the conclusion was drawn regarding the layered-spiral mechanism of crystal growth. The effect of admixtures and their concentration on the faceting and the habitus of the filamentary silicon crystals was established. The admixtures, the atomic volumes of which differ significantly from the atomic volume of silicon affect the habitus of the crystals. The faceting of the crystals depends on the relation of the concentrations of the surface-inactive and surface-active admixtures.

The admixtures adsorbed on the surface change the surface energy of the faces of the crystal which leads to variation of the relation of the growth rates of the various facets. The estimate of the growth rates of different crystallographic faces was made from a comparison of the etching and evaporation rates in a vacuum of the corresponding facets of the filamentary silicon crystals.

A study was made of the admixture distribution in the filamentary crystals of silicon by the chemical etching method. A qualitative estimate of the distribution of the admixtures is represented by the dependence of the etching rate on the distance between the center and the facet of the crystal.

The structural peculiarities of filamentary silicon crystals grown from different admixtures were studied by the method of internal friction in the temperature range of -100 to 700° C. In the negative temperature range on the curve for the dependence of the internal friction, relaxation peaks were detected: at a temperature of -23°C and a frequency of 1,775 hertz in filamentary silicon crystals alloyed with boron; at a temperature of -68° C and a frequency of 2,144 hertz, in filamentary silicon crystals alloyed with copper. The height of the relaxation peaks was established as a function of the degree of alloying of the crystals.

USSR UDC: 621.376.22(088.8)

GOSTEV, A. I.

"A Device for Controlling PIN-Diode Attenuators"

USSR Author's Certificate No 265197, filed 15 Nov 68, published 23 Jun 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D302)

Translation: This Author's Certificate introduces a device for controlling PIN-diode attenuators. The device contains a pentode and a cathode follower based on two triodes connected in parallel with a third triode as the load. To improve the linearity of the damping characteristic of the attenuator, the plus contact of the PIN diode is connected to the cathodes of the pentode and the third triode, while the plate of the pentode is connected to the input of the control device and to the input of the above mentioned cathode follower. The screen grid of the pentode is connected through a variable resistor to the cathodes of the first two triodes. The proposed device can be used together with PIN-diode attenuators for varying the power of a high-frequency signal, and also for amplitude modulation according to a required law. V. P.

1/1

UDC 621.327

USSR

GOLUBKO, A. N., TUMASHOV, V. D., and COSTEV, B. I., Kuybyshev Branch of Special Design Office for Automation in Petroleum Processing and Petrochemistry

"Pneumatic Computer"

USSR Authors' Certificate No 304589, Cl G 06 g 5/00, filed 30 Sep 69, published 25 Jan 71 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 1, Jan 72, Abstract No 1A368P)

Translation: A pneumatic computer is proposed for measuring pneumatic pulse frequency. The device contains two pulsating resistances, the control chambers of which are connected to the input channel of the device and to the output of a constant frequency oscillator, the inputs connected respectively to the feed channel and to the atmosphere and the outputs to the output channel of the device. To increase reliability it is equipped with a memory cell with an adjustable signal storage time with the input of the cell connected to the input channel of the device; and the output, to the control chamber of a valve mounted in the feed channel of the oscillator. One illustration.

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AA 0043441

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent,

241102 CENTRALIZED INTERROGATION OF PNEUMATIC SENSORS is effected by the proposed device, which operates on a principle that is virtually non-air consuming. The diagram, based on three sets of units, for which in practice there are required as many as there are points of control, shows: pneumatic tumblers 1-3; repeaters 4-6; pneumatic valves 7-9; OR elements 10-12; one pneumatic relay 13, one setter 14 and one reading instrument 15. Pneumatic signals from the sensors in the standard range 0.2-1.0 kg/cm^2 arrive in the blind chambers of the respective repeaters. Feed pressure at 1.4 kg/cm^2 reaches the tumblers. If none of the tumblers is switched on, all output pressures of tumblers and repeaters is 0, and the lower contact of relay 13 places instrument 15 in communication with the setter at a pressure of 0.2 kg/cm^2, corresponding to the zero point. If a tumbler, say 2, is on, feed

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AA0043441

pressure at 1.4 kg/cm^2 passes it to 8, to 5 via a fixed choke, and to the OR elements 11, 12, hence opening the top valve of 13 and closing the bottom. The output pressure of 5, equal to that on setter 14, passes the open valve 8 via the common collector line to the upper cavity of 13, whence it is reflected on the measuring instrument.

20.12.67 as 1204611/26-24. B.I. GOSTEV & E.S.CHUNIN (12.8.69) Bul 13/1.4.69. Class 42m^2. Int.Cl.G 06d.

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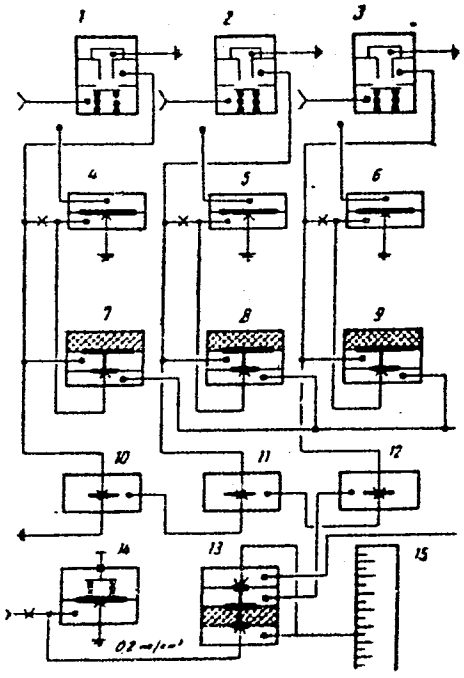

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19761779

USSR UDC: 621.391.82-758.37

GOSTEV, V. I.

"Quadrature Interference Suppressors and Compensators"

Podaviteli i kompensatory kvadraturnoy pomekhi (cf. English above), Kiev, "Tekhnika", 1971, 142 pp, ill. 42 k. (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6A235 K)

Translation: The book describes circuits and devices designed for suppression and compensation of quadrature voltage (shifted in phase by 90° relative to the useful signal). These devices and circuits are necessary for improving the operating quality of automatic regulation and control systems working on a carrier frequency. A comparative evaluation is presented for circuits which suppress and compensate quadrature voltage. The design principles of such circuits are considered, and methods are outlined for analysis, engineering calculation and design of circuits for suppression and compensation in AC tracking systems and measurement devices. Key demodulators are also considered as suppressors of the quadrature component. Particular attention is given to new devices for suppression with synchronous switches which have short time constants and transmission ratios close to unity, high-speed compensation circuits, and also combined circuits for suppressing the quadrature

GOSTEV, V. I., Podaviteli i kompensatory kvadraturnoy pomekhi, Kiev, "Tekhnika", 1971, 142 pp, ill. 42 k.

component and simultaneous correction of the direct component of the carrier frequency voltage. The book is written for engineers, technicians and scientists, and can also be used by graduate and undergraduate students interested in the problems of calculating and designing automatic systems which operate on alternating current. Sixty-three illustrations, two tables, bibliography of thirty-three titles. Annotation.

2/2

USSR

UDC 621.391:621.376

GOSTEV, V. I.

"A Method for the Synthesis of Correcting AC Units Which Demodulate and Modulate a Signal"

Kiev, V sb. Teoriya avtomat. upr. Tr. Seminara (Theory of Automatic Control. Works of a Seminar -- collection of works), 1969, Vol 1, pp 3-15 (from RZh-Radiotekhnika, No 4, 1970, Abstract No 4A101)

Translation: Correcting units are synthesized of the demodulator -- direct current -- modulator type. The transmission function K(p) of the direct current circuit is determined with respect to the primary equivalent transmission function K_{tr} (p) of the unit where the direct current circuit is connected between the demodulator and modulator. The direct current circuit itself is determined which would satisfy the determined transmission function K (p). The circuits are composed of resistors and condensers. The necessary function K_{tr} (p) is obtained by combining tabular transmission functions. Possible realizations of correcting units with the required equivalent transmission function are presented. Orig. article: three illustrations and four bibliographic entries. 1/1

1/3 027 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--SOME PROBLEMS OF SOUND RADIATION BY WAVES PROPAGATING ALONG CURVILINEAR BOUNDARIES -U-
AUTHOR-(03)-BREKHOVSKIKH, L.M., GONCHAROV, V.V., GOSTEV, V.S.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, AKRUSTICHESKIY ZHURNAL, VOL 16, NO 1, 1970, PP 25-31

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--ACOUSTIC PROPAGATION, NONLINEAR EFFECT, SURFACE WAVE, ACOUSTIC DAMPING

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1988/1874 STEP NO--UR/0046/70/016/001/0025/0031

CIRC ACCESSION NO--AP0106542
UNCLASSIFIED

2/3 027 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106542

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NONLINEAR INTERACTION OF SURFACE WAVES EXISTING ALONG THE CURVILINEAR BOUNDARY OF A LIQUID IS CONSIDERED. IT IS SHOWN THAT UNDER CERTAIN CONDITIONS A SOUND WAVE IS PROPAGATED WHOSE AMPLITUDE AT LARGE DISTANCES FROM THE BOUNDARY GREATLY EXCEEDS THE AMPLITUDE OF LINEARLY EXCITED WAVES. DETAILED CALCULATION WAS MADE FOR CYLINDRICAL AND SPHERICAL SURFACES. IT IS POSSIBLE THAT THIS EFFECT ACCOUNTS FOR THE BREAKDOWN OF THE JETS AND DROPS OF LIQUID OBSERVED IN SEVERAL EXPERIMENTS. A METHOD IS PROPOSED WHICH MAKES IT POSSIBLE TO EXTEND RESULTS TO THE CASE OF AN ARBITRARY CONVEX SURFACE WITH A SMOOTHLY CHANGING CURVATURE. THE THEORY SET FORTH CAN PROVE USEFUL IN CALCULATING THE NOISE PRODUCED BY A VIBRATING SURFACE. LET US ASSUME A CONVEX CLOSED SURFACE S SUBO:R EQUALS R SUBO (U, V), R IS IDENTICAL TO (X, Y, Z). IT DIVIDES THE SPACE INTO TWO REGIONS: EXTERNAL AND INTERNAL. ONE OF THE REGIONS IS FILLED WITH A MEDIUM WITH A CONSTANT SPEED OF SOUND AND WITH THE DENSITY OF THE UPERTURBED STATE P. AS S SUBO, BOUNDARIES OF TWO TYPES ARE CONSIDERED: LIQUID VACUUM INTERFACE AND A THIN ELASTIC MEMBRANE BOUNDING A LIQUID OR GAS. THEN LET THERE BE PROPAGATED FURTHER ALONG THE SURFACE S SUBO WAVES WHOSE LENGTH IS LESS THAN THE WAVELENGTH OF SOUND IN THE MEDIUM, SUCH THAT THEIR AMPLITUDE QUITE RAPIDLY DIES AWAY AT INCREASING DISTANCE FROM S SUBO. THESE WAVES WILL BE REFERRED TO AS SURFACE WAVES IN CONTRAST WITH WAVES HAVING A CONSTANT OF SLOWLY ATTENUATING AMPLITUDE, REFERRED TO AS SOUND WAVES. THE PROBLEM IS THEN TO FIND THE PARAMETERS OF THE SOUND WAVE PROPAGATED BY THE INTERACTING SURFACE WAVES.

UNCLASSIFIED

3/3 027 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0106542

ABSTRACT/EXTRACT--FACILITY: ACOUSTICS INSTITUTE OF THE USSR ACADEMY OF SCIENCES.

UNCLASSIFIED

USSR UDC 534.222

BREKHOVSKIKH, L. M., GONCHAROV, V. V., and GOSTEV, V. S., Acoustics Institute of the USSR Academy of Sciences

"Some Problems of Sound Radiation by Waves Propagating Along Curvilinear Boundaries"

Moscow, Akusticheskiy Zhurnal, Vol 16, No 1, 1970, pp 25-31

Abstract: Nonlinear interaction of surface waves existing along the curvilinear boundary of a liquid is considered. It is shown that under certain conditions a sound wave is propagated whose amplitude at large distances from the boundary greatly exceeds the amplitude of linearly excited waves. Detailed calculation was made for cylindrical and spherical surfaces. It is possible that this effect accounts for the breakdown of the jets and drops of liquid observed in several experiments. A method is proposed which makes it possible to extend results to the case of an arbitrary convex surface with a smoothly changing curvature. The theory set forth can prove useful in calculating the noise produced by a vibrating surface.

Let us assume a convex closed surface $S_0: r = r_0(u,v), r \equiv \{x,y,z\}$. It divides the space into two regions: external and internal. One of the

USSR

BREKHOVSKIKH, L. M., et al., Akusticheskiy Zhurnal, Vol 16, No 1, 1970, pp 25-31

regions is filled with a medium with a constant speed of sound and with the density of the unperturbed state ρ. As S_0, boundaries of two types are considered: liquid-vacuum interface and a thin elastic membrane bounding a liquid or gas. Then let there be propagated further along the surface S_0 waves whose length is less than the wavelength of sound in the medium, such that their amplitude quite rapidly dies away at increasing distance from S_0. These waves will be referred to as surface waves in contrast with waves having a constant of slowly attenuating amplitude, referred to as sound waves. The problem is then to find the parameters of the sound wave propagated by the interacting surface waves.

NAV INTSC [illegible]

DEPARTMENT OF THE NAVY
NAVAL INTELLIGENCE SUPPORT CENTER
TRANSLATION DIVISION
4301 SUITLAND ROAD
WASHINGTON, D.C. 20390

CLASSIFICATION: UNCLASSIFIED

TITLE: High-Temperature Oxidation of Aluminum Powders

Vysokotemperaturnoye okisleniye alyuminiyevykh pudr

AUTHOR(S): [illegible], V. L.; [illegible], I. L.; [illegible], N. F.; Dobrokhotov, L. N.; and [illegible], Ye. A.

PAGES: 9

SOURCE: Issledovaniya staley i splavov. Izdatel'stvo "Nauka," 1964
Pages 96-103

ORIGINAL LANGUAGE: Russian

TRANSLATOR: DM

NISC TRANSLATION NO. 3303

APPROVED [illegible]

DATE 16 February 197[illegible]

GOSTEV, YE. A.

TITLE: High-Temperature Oxidation of Aluminum Powders

AUTHORS: Korneyev, V. L.; Vernidub, I. I.; Galkin, N. F.; Dobrokhotov, L. N.; Gostev, Ye. A.

SOURCE: Issledovaniya stali i splavov (Investigations of Steels and Alloys). Izdatel'stvo "Nauka," 1964, 96-103

Great attention is currently being given to high-temperature oxidation of metals in science and technology.

This article was prepared during the development of investigations on high-temperature oxidation of Al powders.* It presents the results of further study of the mechanism of high-temperature oxidation of Al powders in an oxygen medium and examines the successive stages of the process.

Standard P-1, P-2, P-3, and P-4 Al powders served as initial materials, technical or bottled oxygen as the gaseous medium. The characteristics of Al powders are given in the table.

Characteristics of Al Powders

Grade of material	Content, %			Gravity density g/cm³
	Unoxidized Metal	Grease	Moisture	
P-1	95.6	----	----	0.975
P-2	95.6	0.03	0.02	0.825
P-3	----	----	----	1.075
P-4	96.3	none	0.02	0.924

The investigations were conducted in a special installation, a diagram of which appears in Figure 1. The installation consisted of oxygen cylinder (1), reducer (2), valves to regulate oxygen intake (3), two flow meters (4), with chute washers (7), electronic units and millivoltmeters, a reactor for high-temperature oxidation of metallic powders (6), electrical thermometer with induction sensors (11), oscillograph (10), ultrathermostat (7), and high-speed camera (8), and a filter to collect hard particles from excess waste gas.

All powder samples up to 0.8 g in weight were spread in a uniform layer on quartz plate (5) and placed in the reactor.

* Korneyev, V. L.; Vernidub, I. I. High-temperature oxidation of dispersed aluminum. Collection of articles: Investigations of heat-resistant alloys, vol. 7, USSR Academy of Sciences Publishing House, 1961.

1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--HYDROGENATION OF PHENOL IN A PHENOL CYCLOHEXANONE CYCLOHEXANOL MIXTURE AND THE LIQUID PHASE PREPARATION OF CYCLOHEXANOL OVER RANEY

AUTHOR-(03)-FILIPPENKO, L.K., BELONOGOV, K.N., GOSTIKIN, V.P.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED., KHIM. KHIM. TEKHNOL. 1970, 13(3), 441-2

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--PHENOL, CYCLOHEXANONE, CYCLOHEXANOL, CATALYTIC HYDROGENATION, NICKEL, KINETIC EQUATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1102 STEP NO--UR/0153/70/013/003/0441/0442

CIRC ACCESSION NO--AT0134788

UNCLASSIFIED

2/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134738

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM KINETIC EQUATIONS FOR THE REACTIONS OF PHOH, CYCLOHEXANONE (I), AND CYCLOHEXANOL OVER RANEY NI IN AN ATM. OF H, AN EXPRESSION IS DEVELOPED EVALUATING THE PRODUCTION OF I FROM PHOH. AT 150DEGREES AND A CONCN. OF I OF 30-40PERCENT IN THE MIXT., A PRODUCTIVITY OF 200 KG PHOH-HR PER M PRIME3 OF REACTOR VOL. MAY BE ACHIEVED. FACILITY: IVANOV, KHIM. TEKHNOL. INST., IVANOVO, USSR.

UNCLASSIFIED

USSR

UDC 576.858.25.095.38:576.895.42

L'VOV, D. K., GROMASHEVSKIY, V. L, SIDOROVA, G. A., TSIRKIN, Yu. M., CHERVONSKIY, V. I., GOSTINSHCHIKOVA G. V., and ARISTOVA, V. A., Institute of Virology imeni D. I. Ivanovskiy, USSR Academy of Medical Sciences, Moscow

"Isolation of a New Arbovirus "Baku" of the Kemerovo Group From Argasid Ticks Ornithodoros Coniceps in Azerbaydzhan"

Moscow, Voprosy Virusologii, No 4, Jul/Aug 71, pp 434-437

Abstract: Seventeen strains of arboviruses were isolated from Ornithodoros coniceps ticks collected (1,710 specimens) in the spring and summer of 1970 in nests of herring gulls (Larus argentatus) on the islands of the Baku Archipelago in the Caspian Sea. So far, four strains -- prototypes LEIV-28A, -35A, -36A, and -46A -- were analyzed and found to be identical. They do not agglutinate goose erythrocytes. Serological identification tests performed on the LEIV-46A prototype revealed that this strain belongs to the antigenic complex of Chenuda virus of the Kemerovo group. According to the results of complement fixation and neutralization reaction tests, the virus differs from Chenuda, Punta Salinas, Mono Lake, Kemerovo, Tribec, Lipovnik, and Wad Medani viruses. The new virus has been named "Baku virus."

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USSR

UDC 577.1:615.7/9

KHROMENKO, Z. F., GOSTINSKIY, V. D., and IVANOV, N. G.

"Materials on the Primary Toxicologic Evaluation of Hydroterphenyl"

Nauch. tr. Irkutsk, med in-ta (Scientific Works of Irkutsk medical Institute), 1972, vyp. 115, pp 122-123 (from RZh-Biologicheskaya Khimiya, No 8, 1973, Abstract No 8F2170)

Translation: For internal (in the stomach) administration of hydroterphenyl, its LD_{50} for rats and mice was 6.6 and 4.2 grams/kg respectively. At doses of 7.5-10 grams/kg the animals died in 3 to 10 days. In the case of inhalation by the rats (10-200 mg/m^3; 4 hours) no deaths were observed. The threshold concentration of hydroterphenyl with respect to choline esterase activity was 20 mg/m^3; with respect to chloride and phenol content in the urine it was 35 mg/m^3. On repeated internal administration of the hydroterphenyl (over a 3-length period) to rats in doses of 0107-0.5 LD_{50}, a significant reduction in weight gain, intensification of the antitoxic function of the liver, a reduction in choline esterase activity, an increase in the elimination of free and general phenols with the urine, and an increase in the weight factors of the liver, kidneys and spleen were observed. The conclusion was drawn regarding

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USSR

KHRONENKO, Z. F., et al., Scientific Works of Irkutsk Medical Institute, 1972, Vyp 115, pp 122-123

the moderate toxic properties of hydroterphenyl. With respect to general toxic effect the hydroterphenyl belongs to the substances capable to disturbing the functional state of the liver, kidneys and central nervous system. The cumulative properties of hydroterphenyl are weakly expressed.

2/2

USSR UDC 553.981/.985:551.31/.735.1(470.111+51)"313"

GOSTINTSEV, K. K., and MOZIAS, N. M., All-Union Petroleum Scientific Research Geologic Prospecting Institute

"Prospects for Oil and Gas Exploration in the Terrigenous Sediments of the Visean and Turnai Stages in the Timano-Pechora Area"

Moscow, Geologiya Nefti i Gaza, No 1, Jan 73, pp 6-9

Abstract: The tapering of the terrigenous deposits of the Visean stage, observed with many petroleum deposits, is said to indicate the likelihood of further discoveries south-west of the Yugigokoy structure. The formation of these deposits is briefly outlined. The most favorable zone is considered to be south of Ust'-voy. To the north-west of this point the sandy collectors are characterized as residually petroleum saturated, preserved from the disturbance of ancient deposits in a large stratographic pit. The prospects are basically connected to the upheaval of blocks and the subupthrust portions with tectonically shielded pits. In the Turnai deposits the lithologic inland pits, distributed tn the Verkhne-Pechora zone, are said to be the most promising, though only shallow deposits are expected. This is due to similarities with more westerly strata in which petroleum and gas are found, the widespread development of clay, and clayey alevorite in the superior portions on the crown layer, at the base of the subvisean substage.

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UDC 629.7.036.54-66:536.46

USSR

SUKHANOV, L. A., GOSTINTSEV, YU. A., and POKHIL, P. F.

"The Interaction of Burning Gunpowder with the Acoustic Field in the Presence of Equilibrium Reversible Chemical Reactions in a Gas Behind the Flame Front"

Odessa, 11-ya Vses. Konf. po Vopr. Ispareniya, Goreniya i Gaz. Dinamiki Dispersn. Sistem, 1972 -- Sbornik (11-th All-Union Conference on Problems of the Evaporation, Combustion, and Gas Dynamics of Dispersed Systems, 1972 -- Collection of Works), 1972, p 34 (from Referativnyy Zhurnal -- Aviatsionnyye i Raketnyye Dvigateli, No 1, 1973, Abstract No 1.34.145 Resume)

Translation: On the basis of a phenomenological model of unsteady combustion, the authors discuss the process of the interaction of burning gunpowder with the acoustic field, in the case where the products behind the flame are capable of reversible chemical reactions, It is found that the presence of chemically active combustion products behind the flame front exerts an effect, in the first place, upon the decrease of sound velocity in comparison with the sound velocity in a chenically "frozen" medium, and secondly, upon a decrease of the coefficient of reflection of the pressure waves from the combustion zone.

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USSR

UDC 536.46

GOSTINTSEV, Yu. A., SUKHANOV, L. A., POKHIL, P. F., Moscow

"The Theory of Unstable Combustion of a Powder. Stability of Processes in a Semi-Closed Volume"

Zhurnal Prikladnoy Mekhaniki i Tekhnicheskoy Fiziki, No 6, 1971, pp 65-73.

ABSTRACT: Based on the phenomenological theory of unstable combustion, equations are produced describing processes during combustion of a powder in a semi-closed volume. The solution of these equations is found with slight changes in critical nozzle cross section. The stability of the processes within the chamber is studied.

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USSR UDC 541.126

GOSTINTSEV, YU. A., YERMOLAYEV, B. S., and POKHIL, P. F.

"The Powder (Solid-Propellant) Engine as a Homogeneous Chemical Reactor"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 5, 11 Aug 71, pp 1118-1121

Abstract: Earlier approaches to problems of variable combustion of powder in rocket engines have been based on the assumption that the chemical reactions involved proceed within a narrow zone of high-temperature flame. This would mean that the flame temperature depends upon internal engine pressure as well as upon the temperature gradient in the powder condensation phase. However, in a great many cases (such as in the presence of sharp pressure drop in the chamber) the flame temperature may fall so low that the characteristic chemical reaction time t_{chem} will be of the same order as the gas residence time t_{eng}. For such cases, therefore, any model based on the notion of a narrow flame zone is contrary to reality.

To avoid such errors, the authors derived a series of equations to represent gas state, thermal conductivity in the condensation phase, and thermal balance and pyrolysis products in that phase, as well as some other factors.

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USSR

GOSTINTSEV, YU. A., et al., Doklady Akademii Nauk SSSR, Vol 199, No 5, 11 Aug 71, pp 1118-1121

These equations afford a description of all known states encountered when the ratio t_{chem}/t_{eng} is on the order of 1. Such states would include extinction, steady flameless combustion, auto oscillation in the chemical reactor, and repeated ignition -- all very probably encountered in connection with chamber pressure drop.

2/2

USSR

UDC 533.601.1:533.607.11

GOSTINTSEV, YU. A., IL'YUKHIN, V. S., POKHIL, P. F., Moscow. Institute of Chemical Physics, Academy of Sciences, USSR

"The Zone of Reverse Flow in Rapidly Rotating Gas Streams and Jets"

Minsk, Inzhererno-Fizicheskiy Zhurnal, No. 6, 1971, pp 1036-1041

Abstract: In the article are presented the results of an experimental investigation of the near-axial zone of reverse flows of a rotating supersonic underexpanded jet and a helical flow of gas in the diffuser part of the nozzle. With the flow of a rotating stream of gas in the supersonic diffuser part of the nozzle, a zone of reverse currents can form in the vicinity of the axis, just as in the case of a free twisted jet. The origination of such a zone brings about the appearance of a complex pattern of interaction of the shocks in the nozzle, which affect the separation of the stream from the walls and which affects the traction characteristics of the nozzle. 5 figures, 6 bibliographic entries.

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UDC 541.126

USSR

GOSTINTSEV, Yu. A., POKHIL, P. F., and SUKHANOV, L. A.

"Complete System of Equations for Nonstationary Processes of Gunpowder Ignition in a Half-Closed Space"

Moscow, Doklady Akademii Nauk SSSR, Vol 195, No 1, 1970, pp 137-139

Abstract: A novel approach is used to study the problem of powder burning in a semi-enclosed space. The article considers two theoretical effects: the first, the nonadiabatic nature of the nonstationary flame front, connected with the time-variable heat flow from the flame to the condensation phase of the powder; second, the incompleteness of the chemical reactions inherent in the burning of condensed material in a steady-state mode at low pressure and in the burning of the material in a nonstationary mode at high temperature gradients on the surface. To formulate the problem, a model of powder ignition was used with variable temperature of the heated surface and with a quasi-stationary gas phase and chemical reaction zone in the condensation phase. The authors are connected with the Institute of Chemical Physics, Academy of Sciences USSR, Moscow.

1/1

UDC 662.1.4

USSR

GOSTINTSEV, Yu. A., and POKHIL, P. F.

"Mechanism of Erosive Powder Combustion"

Dokl. AN SSSR (Proceedings of USSR Academy of Sciences), 1970, 190, No 1, pp 138-139 (from RZh-Khimiya, No 11 (II), 10 Jun 70, Abstract No 11N1082 by authors)

Translation: The authors suggest a new thermal mechanism of erosive powder combustion, which appears when the thickness of the viscous sublayer in the gas becomes comparable to the height of the roughness elements on the burning surface. Moreover, an increase in the combustion rate occurs not only due to the high intensity of heat transfer from the gas to the condensed-phase ("inflation"), but also due to mechanical entrainment of part of the heated layer ("deflation"). The critical value of parameter $A = \rho V/\rho_s U_s \sqrt{\lambda} \approx 5.5 - 8.2$, determining the moment at which erosion appears, predicted on the basis of this mechanism, coincides well with the value $A \simeq 7 - 8.0$ observed experimentally.

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1/2 033 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--MECHANISM OF EROSION COMBUSION OF GUNPOWDER -U-

AUTHOR-(02)-GOSTINTSEV, YU.A., POKHIL, P.V.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, DOKLADY AKADEMII NAUK SSSR, VOL 190, NO 1, 1970, PP 138-139
DATE PUBLISHED--------70

SUBJECT AREAS--ORDNANCE, PROPULSION AND FUELS

TOPIC TAGS--SOLID GUN PROPELLANT, EROSION, POWDER COMBUSTION, COMBUSTION MECHANISM, BLACK POWDER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1986/1090 STEP NO--UR/0020/70/190/001/0138/0139

CIRC ACCESSION NO--AT0103010
UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AT0103010

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TWO MECHANISMS OF EROSION COMBUSTION OF GUNPOWDER ARE COMPARED. THE HYPOTHESIS OF THE THERMAL MECHANISM OF EROSION COMBUSTION IS PRESENTED, IN WHICH TURBULENCE OF THE COMBUSTION ZONE OVER THE DECOMPOSING SURFACE LEADS TO INCREASED RATE OF COMBUSTION OF THE GASEOUS INTERMEDIATES. THE THEORETICAL TREATMENT OF THIS MECHANISM IS ESSENTIALLY AN EXAMINATION OF HEAT REMOVAL FROM THE FLAME ZONE TO THE GUNPOWDER. THE SECOND MECHANISM OF EROSION COMBUSION OF GUNPOWDER CONSISTS OF THE FOLLOWING. THE HEATED SURFACE OF THE GUNPOWDER, DUE TO DISPERSION, FOAMING, BOILING, AND SO ON OCCURRING IN THE HEATED ZONE OF THE K PHASE, IS ALWAYS UNEVEN AND THE FLOW IN THE TUBE PAST THE GUNPOWDER BEGINS TO 'TAKE NOTE' OF THE ROUGHNESSES, AT WHICH THE REYNOLDS NUMBER FOR THE ROUGHNESS ELEMENT ATTAINS A VALUE SUFFICING TO SUPPORT EROSION COMBUSTION WHEN THE THICKNESS OF THE VISCOUS SUBLAYER IN THE GAS BECOMES COMPARABLE WITH THE HEAT OF THE ROUGHNESS ELEMENTS ON THE HEATED SURFACE.

UNCLASSIFIED

Instruments and Measurements

USSR UDC: 621.317.34:621.372.5

GOSTISHCHEV, L. N.

"Measurement of Small Loss Attenuations in Microwave Two-Terminal Pair Networks by the Method of Symmetric Circuits"

Tr. VNII fiz.-tekhn. i radiotekhn. izmereniy (Works of the All-Union Scientific Research Institute of Physicotechnical and Radio Engineering Measurements), 1970, vyp. 2(32), pp 16-31 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5A216)

Translation: The paper discusses a method of measuring low losses in which the measurement process is combined with calibration of the measuring instrument. Five illustrations, bibliography of six titles. Resumé.

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USSR

SIROTA, N. N., GOSTISHCHEV, V. I., and DROZD, A. A., Institute of Solid State Physics and Semiconductors, Belorussian Academy of Sciences

"Study of Thermoelectromotive Force of Aluminum in Strong Magnetic Fields at Low Temperatures"

Moscow, Pis'ma v ZhETF, Vol 16, No 11, 1972, pp 580-583

Abstract: It is asserted that this is the first paper to be devoted to the effect of magnetic fields on the magnitude, sign, and anisotropy of the thermoelectromotive force in aluminum. Experiments conducted on the effect of a constant magnetic field of intensities of up to 50 kOe on the dependence of the thermoelectromotive force on anisotropy and temperature in aluminum in the temperature range of 5.4 to 79° K are described. The method of the experimentation has been described in earlier papers, among them one by the authors named above in the same journal (16, No 4, p 242, 1972). The object of the experimentation was a monocrystal cut from an ingot and measuring 3X4X60 mm, and the magnitude of the thermoelectromotive force was determined as a ratio to that of lead. Curves of the force as functions of the temperature and the magnetic field intensity are given, as well as a diagram of the force anisotropy.
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SIROTA, N. N., GOSTISHCHEV, V. I., and DROZD, A. A.

"Investigating the Thermal Conductivity of Aluminum at Low Temperatures and in Strong Magnetic Fields"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, vol 16, No 4, 1972, pp 242-245

Abstract: Experimental work designed to study the thermal conductivity of an aluminum monocrystal, cut from an ingot, with an electrical resistance of $1.2\ 10^{-10}$ ohms·cm, is described in this letter. The crystal is at a low temperature in the range of 6 to 57° K and is placed in a transverse magnetic field with intensities of up to 50 kilooersteds. Measurements were made by the stationary heat flow method, with the difference in temperature along the specimen generated by two electric heaters attached to its terminals, and the magnetic field was produced by an electromagnet with superconductive windings. Curves are plotted for the thermal conductivity as a function of the temperature and the magnetic field intensity. The authors, affiliated with the Institute of Solid State and Semiconductor Physics of the Belorussian Academy of Sciences, find that the transverse magnetic field has a profound effect on the thermal conductivity of high-purity aluminum.

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USSR

UDC 591.1.15

ALIVERDIYEV, A. A., BUKAROV, N. G., and GOSTISHCHEVA, L. V.

"Change of the Content of Amide Groups of Water-Soluble Brain Proteins Under the Effect of UV-Radiation"

Sb. nauch. soobshch. Dagestan. un-t (Collected Scientific Works. Dagestan University), 1971, ch. 4, pp 173-180 (from RZh-Biologicheskaya Khimiya, No 7, Apr 72, Abstract No 7F1333)

Translation: In experiments on rats, the authors studied the effect of UV-radiation on the content of amide groups in water-soluble and water-insoluble brain protein fractions. It is shown that in water-soluble proteins appreciable changes (relative to the control) set in after the fifth session of exposure, reaching a maximum by the tenth session. A change is noted in the ratio between unstably bound and strongly bound amide groups. After the fifth session, the water-soluble proteins showed a reduction in the content of both the unstably bound and the strongly bound groups. After the tenth session, an increase is observed in the content of unstably bound amide groups.

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Acc. Nr: AP0044854 Ref. Code: UR0531

PRIMARY SOURCE: Khirurgiya, 1970, Nr 1 , pp 79-85

G

DISTINCTIVE FEATURES OF HEMODYNAMICS IN CYCLOPROPANE-INDUCED ANESTHESIA

Gostishcheva, S. S.; Dobrova, A. M.

Results of investigations into cardiac activity and peripheral circulation in 224 patients operated upon in connection with various surgical diseases under cyclopropane anesthesia are reported. The authors evince the ability of cyclopropane to raise arterial pressure when itsinitial level is low and to continually maintain it throughout the whole of the operation. Thr increased arterial pressure figures (in hypertensive disease) either tended to go down, or remained stable. Disturbed cardiac rhythm noted in 1.3% of cases was due to either insufficient degree or excessively deep anesthesia.

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02 DI

REEL/FRAME
19771709

USSR UDC 621.396.677(02)

ARDAB'YEVSKIY, A. I., VOLKOV, O. A., VOSKRESENSKIY, D. I., GOSTYUKHIN, V. L., GRANOVSKAYA, R. A., GRINEVA, K. I., KRITSYN, V. A., MYAKISHEV, B. YA., FILIPPOV, V. S., CHEBYSHEV, V. V.

"Microwave Antennas and Devices. Calculation and Design of Antenna Arrays and their Radiating Elements. Textbook for Students at the Radiotechnical Specialized Institions of Higher Learning"

Antenny i ustroystva SVCh. Raschet i proyektirovaniye antennykh reshetok i ikh izluchayushchikh elementov. Uchebn. posobiye dlya stud. radiotekhn. spets. vyzov (cf. English above), Moscow, Soviet Radio, 1972, 320 pp, ill., 75 k. (from RZh-Radiotekhnika, No 6, Jun 72, Abstract No 5B32K)

Translation: Methods of calculating the basic parameters of antenna arrays with electric rocking of the radiation pattern and frequency and commutation methods of controlling the radiation pattern are discussed. A study is made of the structure of the optimal arrays with Dolf-Chebyshev distribution, the design of irised-wave guide and horn arrays and also methods of calculating the array elements: dielectric, rod, spiral, horn and director antennas.

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1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--DESIGN OF LINK SYSTEMS HAVING MULTIPLEXED OUTPUTS -U-

AUTHOR--GOSZTONY, G.

COUNTRY OF INFO--USSR

SOURCE--HIRADASTECHNIKA 1970, VOL 21, NR 2, PP 52-56

DATE PUBLISHED--------70

SUBJECT AREAS--ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--DATA LINK, MULTIPLEX SIGNAL, CIRCUIT DESIGN, CALCULATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1982/0687 STEP NO--HU/0024/70/021/002/0052/0056

CIRC ACCESSION NO--AP0052146

UNCLASSIFIED

2/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0052146

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NUMEROUS TYPES OF LINK CIRCUITS FOR THE SELECTION OF DIRECTION CAN BE DESIGNED BY THE GENERALIZED FORM OF JENSEN'S FORMULA WORKED OUT IN THE PRESENT PAPER. FOR THE DESIGN OF OTHER TYPES THERE IS NO ACCURATE PROCEDURE OF COMPUTATION. WITH THE PROPOSED APPROXIMATIVE METHOD THE CONGESTION CAN BE SIMPLY DETERMINED IN AN ARBITRARY SYSTEM. THE ERROR OF THE APPROXIMATIVE PROCEDURE IS IN THE MAJORITY OF THE CASES ABOUT 10PERCENT COMPARED TO THE ACCURATE COMPUTATION AND RESULTS OF SIMULATION.

UNCLASSIFIED

USSR UDC 621.791.756.011

GOTAL'SKIY, Yu. N., MAKHNENKO, V. I., SHEKERA, V. M., Ye. O. Paton Electric Welding Institute

"Influence of Nickel in Austenitic Seam Metal on Stresses in Neighboring Dissimilar Steels"

Kiev, Avtomaticheskaya Svarka, No 5, May 1972, pp 25-29.

Abstract: Butt joints of types Kh18N10T and type 3 steels were produced by automatic welding under flux with a welding current of 460-500 a, voltage 25-28 v, welding rate 16 m/hr, power application 5,400 cal/cm. It was found that the nature of the stress state and residual stresses in welded joints of dissimilar steels after welding were practically independent of the nickel content in the austenitic seam metal. In welded joints subjected to heat treatment or used at high temperatures, the stress gradient in the welding zone decreases with increasing nickel content in the seam metal. This should result in an increase in the usage qualities of the joints, since this is the area of maximum tendency toward structural defects (vacancies, dislocations).

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1/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DISTRIBUTION OF CARBON IN THE FUSION ZONE OF DIFFERENT STEELS IN THE PRESENCE OF A STRUCTURAL HETEROGENEITY IN THE ZONE -U-
AUTHOR-(02)-GOTALSKIY, YU.N., STRUINA, T.A.

COUNTRY OF INFO--USSR

SOURCE--AVTOMAT. SVARKA 1970, 23(4), 20-4

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATERIALS

TOPIC TAGS--AUSTENITIC STEEL, CARBON, PHYSICAL DIFFUSION, STEEL WELDING/(U)KH19N11M3 STEEL, (U)ST3 STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0296 STEP NO--UR/0125/70/023/004/0020/0024

CIRC ACCESSION NO--AP0134101

2/2 025 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0134101
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF C IN THE FUSION ZONE BETWEEN THE AUSTENITIC KH19N11M3 STEEL AND SURFACED ST3 WAS INVESTIGATED BY THIN LAYER SPECTRAL ANAL. AFTER A PRELIMINARY THERMAL TREATMENT OF SPECIMENS (300 HR AT 600DEGREES). METALLOGRAPHIC OBSERVATIONS REVEAL A PRONOUNCED STRUCTURAL HETEROGENEITY IN THE FUSION ZONE THAT IS CHARACTERISTIC FOR MANY WELDED STRUCTURES CONTG. DIFFERENT STEELS. THE SPECTRAL ANAL. RESULTS CONFIRM A SUBSTANTIAL REDISTRIBUTION OF C IN THE ZONE; ITS CONCN. DECREASES IN THE NONAUSTENITIC ST3 STEEL ATTAINING A RATHER HIGH VALUE IN A THIN LAYER OF KH19N11M3 THAT IS IN CONTACT WITH ST3. WHEN EXAMG. THE C PERCENT VS. D CURVES, WHERE D IS THE DISTANCE FROM THE CONTACT INTERFACE, IT IS EVIDENT THAT THE ENERGY OF WELDING CAN SIGNIFICANTLY INFLUENCE THE REDISTRIBUTION OF C. AT HIGHER ENERGIES THE THICKNESS OF THE DECARBURIZED LAYER IN ST3 DECREASES; THIS VALID ALSO FOR THE CARBURIZED ONE IN KH19N11M3. NEVERTHELESS, THE INCREMENT IN THE CONCN. OF C IN KH19N11M3 BECOMES, IN THIS CASE, VERY SHARP. IT INDICATES THAT HIGHER WELDING ENERGIES LEAD TO SPECIAL CONDITIONS WHICH HINDER THE DIFFUSION OF C BOTH IN ST3 AND KH19N11M3. THIS PHENOMENON MIGHT BE RELATED TO AN IMPORTANT GRAIN COARSENING IN THE FUSION ZONE AT HIGHER WELDING TEMPS. WHICH LOWERS THE RATE OF GRAIN BOUNDARY DIFFUSION. FACILITY: INST. ELEKTROSVARKI IM. PATONA, KIEV, USSR.

UNCLASSIFIED

USSR UDC 621.791.042:669.15-194

GOTAL'SKIY, YU. N., and SNISAR', V. V.

"ANZhR-2 Electrodes for Welding Various Types of Steels Operating at 450-550°C"

Kiev, Avtomaticheskaya Svarka, No 3, Mar 71, p 73

Abstract: This article contains a brief report on ANZhR-2 electrodes for welding heat-resistant steels to austenitic steels. These electrodes ensure no less than 31% Ni in the weld metal. Developed by the Institute of Electric Welding imeni Ye. O. Paton; the electrodes not only guarantee the required nickel content but also rule out the formation of structural inhomogeneities during prolonged operation under heating conditions up to 550°C. The highly desirable mechanical properties of the electrodes and the purely austenitic deposited metal they produce are discussed. The electrodes are manufactured from EP673 wire according to Institute of Electric Welding specifications IES-26E-69.

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1/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70

TITLE--MECHANISM FOR AUTOMATICALLY CORRECTING VIBRATIONS AND RISINGJMF THE ELECTRODE IN THE WELDING OF MULTI LAYERED WELDS -U-

AUTHOR--GOTALSKY, YU.N., STRETOVICH, A.D.

COUNTRY OF INFO--USSR

SOURCE--AVTOMAT. SVARKA JAN. 1970, 23(1) 75

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--AUTOMATIC CONTROL SYSTEM, WELDING EQUIPMENT, WELDING ELECTRODE, COUPLING CIRCUIT, VIBRATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/1212 STEP NO--UR/0125/70/023/001/0075/0075

CIRC ACCESSION NO--AP0107688

UNCLASSIFIED

2/2 026 UNCLASSIFIED PROCESSING DATE--11SEP70

CIRC ACCESSION NO--AP0107688

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN AUTOMATIC DEVICE FOR CONTROLLING THE POSITIONING AND TRAVEL OF THE ELECTRODE IN THE PRODUCTION OF MULTI LAYERED WELDS IS DESCRIBED. WITH THE ADDITION OF EACH NEW LAYER IN THE MULTI LAYERED SYSTEM, THE AMPLITUDE OF THE ELECTRODE VIBRATIONS AND ITS DEGREE OF LIFT MUST BE ALTERED. THE PROPOSED DEVICE ENABLES THIS PROCESS TO BE CARRIED OUT AUTOMATICALLY BY MEANS OF A SIMPLE MECHANICAL COUPLING. UNLIKE EXISTING DEVICES DESIGNED FOR THE SAME PURPOSE, IT CAN BE USED FOR WELDING UNDER FLUX.

UNCLASSIFIED

USSR UDC 612.817.1

GOTGIL'F, I. M., Institute of Evolutionary Physiology and Biochemistry imeni I. M. Sechenov, Academy of Sciences USSR, Leningrad

"The Effect of Imidazoles on Nerve-Muscle Synapses During Shifts in pH of the Medium"

Moscow, Doklady Akademii Nauk SSSR, Vol 206, No 3, 1972, pp 733-736

Abstract: In experiments carried out on nerve-muscle preparations of m. sartorius and m. cutaneus pectoris of the grass frog Rana temporaria, the effects of imidazole, 2-methylimidazole, and benzimidazole on the amplitude and quantum composition of the end plate potentials at pH 6.0 - 8.7 and the frequency and amplitude of the miniature end plate potentials at pH 7.5 - 8.7 were studied. The relative amounts of the cationic and nonionic forms (I and II, respectively) of the compounds were determined on the basis of pH and the equilibrium constant by using the formula $pH = pK_{\alpha_1} + lg([II]/[I])$, where pK_{α_1} is 6.95, 7.75, and 5.4 for imidazole, 2-methylimidazole, and benzimidazole, respectively. A study of the relationship between the effects of the three compounds and the ratio [I]/[II] indicated that an increase in the amplitude of endplate potential and in the mean number of mediator quanta per pulse was 1/2

USSR

GOTGIL'F, I. M., Doklady Akademii Nauk SSSR, Vol 206, No 3, 1972, pp 733-736

associated with the presence of II. Only imidazole increased the frequency of miniature endplate potentials. Possibly the substituted imidazoles had only a slight effect on the Ca-independent fraction of miniature endplate potentials, which is of significance in frogs. The compounds studied produced different postsynaptic effects, as shown by the fact that imidazole and 2-methylimidazole slightly reduced the amplitude of the miniature endplate potentials, while benzimidazole increased it. The results of the investigation indicated that the compounds studied affected both the presynaptic and postsynaptic processes in the cholinergic synapse. Their presynaptic activity was much more pronounced, with a stimulating effect on the freeing of acetylcholine being exerted only by the nonionic form of the compounds.

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USSR

UDC 669.187.2.083

GOTIN, V. N., ZAYTSEV, B. YE., SHCHERBAKOV, A. I., ZHITKOV, N. K., OKOROKOV, G. N., BOYARASHINOV, V. A., VOYNOVSKIY, YE. B., TOPILIN, V. V., SHALIMOV, AL. G., OSIPOVA, L. M., CHERNOV, YU. V., ROZANOVA, T. S., and LAKTIONOV, V. S.

"Influence of Wall Thickness of Crystallizer and Consumption of Cooling Water on Conditions of Formation of Ingot During Vacuum Arc Remelting"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 178-180

Translation: In a vacuum arc furnace in a crystallizer (C) 160 mm in diameter with a current of 2.0-3.7 ka, the influence of wall thickness of C and temperature of cooling water on conditions of formation of ingot of complexly alloyed nickel-based alloys is studied. C with wall thicknesses of 50 and 18 mm were studied, the temperature on the outer surface of the C reaching 75°C in the first case, 105°C in the second. The temperature of the internal surface of the C was identical, 140-150°C. Neither a change in C thickness nor a change in water consumption from 11 to 22 m^3/hr influenced the depth of the liquid metal bath, i.e., both repeated rolling of the C and reduced water consumption were permissible. 2 figures.

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UDC:669.187.5

USSR

ZAYTSEV, B. Ye., GOTIN, V. N., SHCHERBAKOV, A. I., SERGYEV, A. B., ZHITKOV, N. K., OKOROKOV, G. N., BOYARSHINOV, V. A., TULIN, N. A., VOYNOVSKIY, Ye. V., TOPILIN, V. V., POZDEYEV, N. P., SHALIMOV, Al. G., OSIPOVA, L. A., CHERNOV, Yu. V., and RAZANOV, T. S.

"Specifics of Vacuum Arc Remelting of Nickel-Based Alloys and Stainless Steels With Reverse Arc Polarity"

Proizvodstvo Chernykh Metallov [Production of Ferrous Metals--Collection of Works], No 75, Metallurgiya Press, 1970, pp 181-183

Translation: Results are presented from a study of vacuum arc remelting of nickel alloys in a crystallizer 380-480 mm in diameter with thermocouples calked in length and height. The rate of melting with reverse polarity is 20% higher with identical bath depth of liquid metal. This is a result of more intensive heat transfer from the walls of the crystallizer during melting with reverse polarity. The macrostructure, chemical composition N, O, H and mechanical properties of the metal produced by melting with forward and reverse polarity are identical. The ingot produced with reverse polarity had no corona. 2 figures; 1 table; 1 biblio. ref.

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USSR UDC: 621.396.6-181.5

BRITSIS, A. B., GOTLIB, D. S., KRUCHAN, Ya. Ya., OZOLS, K. K., and SHARLOVSKIY, B. V.

"Investigating the Characteristics of Thin Film Contact Areas for Hybrid Integrated Circuits"

Elektron. tekhnika. Nauchno-tekhn. sb. Mikroelektronika (Electronic Engineering, Scientific-Technical Collection, Microelectronics) 1970, No. 2(23), pp 20-27 (from RZh-Radiotekhnika, No. 3, March 71, Abstract No. 3V330)

Translation: It is shown that copper films can be used instead of gold as the conducting layer of contact areas for hybrid microcircuits when the assembly is sealed. Resume

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1/2 C15 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--EQUILIBRIUM EQUATIONS OF A PLATE OF VARIABLE THICKNESS -U-

AUTHOR-(02)-GETLIB, TS.A., PROKOPOV, V.K.

COUNTRY OF INFO--USSR

SOURCE--MOSCOW, PRIKLADNAYA MATEMATIKA I MAKHANIKA, NO 2, 70, PP 332-338

DATE PUBLISHED--------70

SUBJECT AREAS--MECH., IND., CIVIL AND MARINE ENGR, MATHEMATICAL SCIENCES

TOPIC TAGS--DIFFERENTIAL EQUATION, GEOMETRY, POTENTIAL ENERGY, CAUCHY PROBLEM, CIRCULAR PLATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY FICHE NO----FD70/6C5041/C01 STEP NO--UR/0040/70/000/002/0332/0338

CIRC ACCESSION NO--AP0142723

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--11DEC78

CIRC ACCESSION NO--AP0142723

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DIFFERENTIAL EQUILIBRIUM EQUATIONS OF A PLATE OF VARIABLE THICKNESS ARE ESTABLISHED BY THE SYMBOLIC METHOD OF A. I. LUR'YE, USING THE FORMULAS OF CAUCHY FOR THE EQUILIBRIUM CONDITIONS ON THE ENDS OF A PLATE. FUNCTIONS CHARACTERIZING THE GEOMETRIC AND FORCE BOUNDARY CONDITIONS ARE DERIVED ON THE BASIS OF THE PRINCIPLE OF THE MINIMUM OF THE POTENTIAL ENERGY. DISCUSSED ARE RECTANGULAR PLATES, PLATES SYMMETRICAL TO THE INITIAL PLANE, AND PLATES WITH THE LOWER SURFACE AS BASE. THE AXISYMMETRIC PROBLEM OF THE EQUILIBRIUM OF A CIRCULAR PLATE OF VARIABLE THICKNESS IS ALSO DISCUSSED.

UNCLASSIFIED

USSR UDC 576.31

GOTLIB, V. Ya., PELEVINA, I. I., AFANAS'YEV, G. G., and LIPCHINA, L. P., Institute of Chemical Physics, Academy of Sciences USSR, Moscow

"Alteration of the Lethal Irradiation Effect by Means of Chemical Compounds Under Conditions of Cell-Culturing Outside an Organism"

Moscow, Doklady Akademii Nauk SSSR, Vol 192, No 6, Jun 70, pp 1,367-1,370

Abstract: The possibility of modifying cellular radiosensitivity in tissue culture by means of an inhibitor of radical reactions -- propyl gallate -- was investigated. LL cells were obtained from NKL, mice, and seven-day monodisperse cell cultures were used. Irradiation was conducted 18 hrs after inoculation of media. PG was added 18 hrs and 15 min prior to irradiation. After 10 days of culturing, cells were stained with toluidine blue and counted. It was determined that identical doses of GP had different effects on the cells, depending on the time of contact prior to irradiation. Contact of 18 hrs resulted in increased radiosensitivity of the experimental cell population and a higher kill ratio, whereas 15 min of exposure resulted in radio-protective action. It was assumed that the metabolic products of PG were important in the sensitization effect. During short exposure, a reaction took place between PG and the radicals formed during irradiation, resulting in their deactivation.

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Polymers

THE RHEOLOGY OF POLYMERS

(Symposium in Moscow)

[Article by Doctor of Physical and Mathematical Sciences [illegible] Malkin; Moscow, Vestnik Akademii Nauk SSSR, Russian, Vol [illegible], No 8, August 1972, pp 119-121]

Rheological investigations are being developed [illegible] rections at the present time: firstly, as a component [illegible] physicochemical work pursuing the goal of establishing [illegible] eral correspondences between the molecular structure [illegible] stance and its macroscopic properties and, secondly, [illegible] tion of the mechanics of continua which is interested in [illegible] connections between the kinematic and dynamic parameters [illegible] and in solving the corresponding boundary problems and [illegible] plication to analysis of concrete technological processes. [illegible] the regular (Seventh) symposium on the rheology of polymers, [illegible] ganized by the Institute of Petrochemical Synthesis imeni [illegible] Topchiyev of the AS USSR and held on [illegible]-14 April in Moscow, [illegible] main attention was given to the first direction of investi[illegible]. Participating in the sessions were over 300 persons, [illegible] group of scientists from East Germany, Poland, Czechoslo[illegible] Bulgaria, about 150 reports were heard. Discussed at [illegible] sium was a broad complex of problems connected with the [illegible] physical chemistry and mechanics of polymeric materials, [illegible] of the molecular nature of relaxation effects in [illegible] chains, and the construction of mechanical models [illegible] titative description of the behavior of a polymer [illegible] ent conditions of deformation with detailed comparison [illegible] lecular parameters of reliably characterized samples [illegible] viscoelastic properties. Discussed with special inter[illegible] the problem of the liquid crystalline state and the [illegible] of the physical structure of the system on its rheolo[illegible] perties.

The symposium was opened with the addresses of [illegible] of K. A. Andrianov and A. Yu. Ishlinskiy, who emphasized the

GO[illegible]IB, Yu. Ya.

AA0040653 Gotovtsev, A.A. UR 0482

Soviet Inventions Illustrated, Section I Chemical, Derwent, 1-70

240720STRENGTHENING SINTER, PELLET CHARGES by exposing these prior to high-temperature treatment to fields of alternating polarity. When the direction of the lines of force changes, the anions and cations move, as also the colloidal particles carrying like charges and together with these the more extensively dispersed particles in the moist part of the charge, and in moving they naturally migrate to their respective poles. The electroneutral molecules and associates which form with these take up a strictly determined orientation. Several changes in polarity vary the direction and speed of opposite charged particles and they form neutral associates on collision. Briquettes containing 0.25-0.30% bentonite are raised to maximum strength when passed through eight alternating fields, with intensity 800-1200 oersteds at 10 m/min.

3.7.67 as 1169547/22-2. GOTOVTSEV.A.A.et al. DNEPROPETROVSK METALLURGICAL INST. (26.8.69) Bul 13/ 1.4.69. Class 18a. Int.Cl.C 21 b.

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AUTHORS: Gotovtsev, A. A.; Sviridenko, Zh. V.; and Zemlyanoy, A. A.

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GOTOVTSEV, A. V.

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JPRS 6063
27 November 1960

SELF-SIMILAR FLOWS IN A MAGNETOHYDRODYNAMIC BOUNDARY LAYER IN THE PRESENCE OF BLOWING OF A LIQUID WITH DIFFERENT CONDUCTIVITY

[Abstract of a Paper by A. V. Gotovtsev Given at a Magnetohydrodynamic Conference, pp 64-66]

The numerical solution of the self-similar system of equations of magnetohydrodynamics of the boundary layer on a nonconducting surface was obtained in the case of blowing across the wall of the liquid having conductivity differing from the conductivity of the medium in the primary flow. If the following are given:

$$u_\infty(x) = C x^m,\quad v_w(x) = v_{w0} x^{(m-1)/2},\quad B(x) = B_0 x^{(m-1)/2},$$
$$E(x) = E_0 x^{(3m-1)/2} \qquad (C, m, v_{w0}, B_0, E_0 = \mathrm{const}),$$

then the flow in the magnetohydrodynamic boundary layer will be self-similar. Here, x is the coordinate reckoned along the curve; u_∞ is the velocity of the medium on the outside boundary of the boundary layer; v_w is the blowing velocity; B is the component normal to the surface of the magnetic field $\vec{B}$ lying in the plane of the flow; E is the intensity of the electric field directed along the normal to the plane of the flow.

The system of equations in self-similar variables has the form

$$\varphi_i''' + \varphi_i \varphi_i'' + \frac{2m}{m+1}\left(\frac{\rho_1}{\rho_i} - \varphi_i'^2\right) + \frac{2n}{m+1} \cdot \frac{\rho_1}{\rho_i}\left[(\bar\sigma_1 - \bar\sigma_i \varphi_i') + s(\bar\sigma_i - \bar\sigma_1)\right] = 0,$$
$$\varphi_i = \varphi_i(\eta_i), \quad i = \begin{cases} 1 & \text{при } \ldots < \eta_1 < \infty \\ 2 & \text{при } 0 < \eta_2 < \eta_p \sqrt{\frac{\nu_2}{\nu_1}} \end{cases} \qquad (1)$$

Here n is the parameter of the magnetohydrodynamic effect; $s = (\sigma_2 E)/(u_\infty B)$; $\bar\sigma_1$ and $\bar\sigma_2$ are the dimensionless conductivities of the basic and blown liquid; η_p is the discontinuity surface coordinate; the function $\varphi'_i = \phi'_i(\eta_i)$ is the dimensionless tangential velocity. The index i = 1 corresponds to the basic liquid, and i = 2 corresponds to the blown liquid.

1/2 057 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--SEPARATION PARAMETER OF A TURBULENT MAGNETOHYDRODYNAMIC BOUNDARY LAYER -U-

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COUNTRY OF INFO--USSR

SOURCE--TEPLOFIZIKA VYSOKIKH TEMPERATUR, VOL. 8, JAN.-FEB. 1970, P. 123-129

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--TURBULENT BOUNDARY LAYER, BOUNDARY LAYER HEAT TRANSFER, ELECTRIC FIELD, FLOW SEPARATION, MAGNETOHYDRODYNAMIC FLOW

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/0383 STEP NO--UR/0294/70/008/000/0123/0129

CIRC ACCESSION NO--AP0111576

UNCLASSIFIED

2/2 057 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0111576

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DERIVATION OF SEMIEMPIRICAL EQUATIONS FOR DETERMINING THE SEPARATION PARAMETERS OF TURBULENT MAGNETOHYDRODYNAMIC BOUNDARY LAYERS OF COMPRESSIBLE AND INCOMPRESSIBLE CONDUCTING FLUIDS WITH ALLOWANCE FOR HEAT TRANSFER. DIMENSIONLESS VARIABLES CHARACTERIZING THE EFFECT OF AN ELECTRIC FIELD ON THE SEPARATION PROCESS ARE DETERMINED, SHOWING THAT FLOW SEPARATION CAN BE CONTROLLED BY APPLYING AN ELECTROMAGNETIC FIELD. CONDITIONS ARE DEFINED UNDER WHICH THE SEPARATION OF A TURBULENT MAGNETOHYDRODYNAMIC BOUNDARY LAYER CAN BE DELAYED OR EVEN PREVENTED BY SUBSTANTIALLY INCREASING THE SEPARATION PARAMETER WITH THE AID OF THIS TECHNIQUE. FACILITY: ISENTRAL'NYI NAUCHNO-ISSLEDOVATEL'SKII INSTITUT AVIATSIONNOGO MOTOROSTROENIIA, MSOCOW, USSR.

UNCLASSIFIED

USSR UDC 612.816

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"The Expectancy Wave (E-Wave) in the Presence of Muscular Fatigue"

Yerevan, Biologicheskiy Zhurnal Armenii, Vol 25, No 6-7, Jun/Jul 72, pp 89-99

Abstract: E-waves were studied as possible indexes of muscular fatigue. Sports school students and youths not involved in sports responded to an instruction for motor activity (pressing a button) 1-3 sec after a preliminary sound signal prior to and after work on a bicycle ergometer. Light motor activity (balancing on the exerciser) caused E-waves to be more distinct than those recorded at rest. After exercising, E-waves were suppressed for varying periods of time depending on the amount of exercise and the test subject's background: E-wave recovery took longer for non-athletes than for athletes. On the example on one test subject, recovery times were 4, 7, 13, and 17 minutes after working on the exerciser 1, 1.5, 2.5, and 3 minutes. It is concluded that E-waves are a better index of muscular fatigue than the EMG.

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USSR UDC 542.91:547.963.3

KRAYEVSKIY, A. A., DEGTEREV, Ye. V., GOTTIKH, B. P., and NIKOLENKO, L. N., Institute of Molecular Biology, Academy of Sciences USSR

"Aminoacyl Derivatives of Nucleosides, Nucleotides and Polynucleotides. 10. The Feasibility of Using Diethyl Phosphate Imidazolide for the Synthesis of 3'(2')-O-Aminoacyl Nucleotides"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1730-1736

Abstract: In the search for imidazole compounds which react in an aqueous medium with carboxylic acids to give their imidazolides, the authors studied the interaction of diethyl phosphate imidazolide with acetic acid and tert.-butylhydroxycarbonyl alanine in an aqueous medium and in absolute isopropanol. It was found spectrophotometrically that the corresponding imidazolides are formed. It is shown that it is possible in principle to use diethyl phosphate imidazolide as activating agent for the synthesis of 3'(2')-aminoacyl nucleotides as a result of the reaction between amino acid and nucleotide in an aqueous medium, but that this reactant is not effective enough, since the rate of its hydrolysis is of the same order as the rate of N-acylimidazole hydrolysis.

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KRAYEVSKIY, A. A., et al., Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1730-1736

The authors thank Yu. A. TETERIN for taking PMR spectra.

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USSR UDC 542.91:547.963.3

TARUSOVA, N. B., MAZUROVA, V. V., KRAYEVSKIY, A. A., and GOTTIKH, B. P., Institute of Molecular Biology, Academy of Sciences USSR

"Aminoacylation of Nucleosides, Nucleotides and Polynucleotides. 11. Synthesis of 3'(2')-O-L-α-Aspartyl-adenosine-5'-phosphate"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 8, Aug 71, pp 1736-1740

Abstract: The article shows that the imidazolide method can be extended to dicarboxylic amino acid derivatives and used for the synthesis of α-aspartyl ester of adenosine-5'-phosphate as a result of the reaction of the imidazolide of β-tert.-butyl ester of N-tert.-butylhydroxycarbonyl-aspartic acid with pA. The structure of the resultant compound was confirmed by hydrolysis and ammonolysis. The stability of the compound in aqueous solutions at various pH values was determined.

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USSR UDC 542.91 + 547.963

PURYGIN, P. P., KRAYEVSKIY, A. A., GOTTIKH, B. P., Institute of Molecular Biology, Moscow, Academy of Sciences USSR

"Synthesis of Aminoacyl Derivaties of Nucleosides, Nucleotides, and Polynucleotides. VI. Synthesis of 3'(2')-O-Peptidylnucleoside-5'-triphosphates"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1369-1372

Abstract: It was shown that the synthesis method for O-aminoacyl derivatives of nucleotides and nucleoside triphosphates could be extended to the preparation of 3'(2')-O-peptidyl-nucleoside-5'-triphosphates. N,N'-carbonyldiimidazole (11.6 mg) was added to a solution of 13.2 mg of BOC-Ala-AlaOH in 0.1 ml of DMFA, stirred for 5-10 min at 20-22°, and the imidazolide formed was added to a solution of about 0.018 mmole of the nucleoside-5'-triphosphate in 0.5 ml water (adenosine-or guanosine-5'-triphosphate). The reaction mixture was stirred for 3.5 hrs at 20-22°, and paper chromatographed, the product was eluted at 4° and lyophilized. In a similar manner

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PURYGIN, P. P., et al, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 70, pp 1369-1372

BOC-Leu-Gly-TrpOH reacted with cytidine- and uridine-5'-triphosphate giving the respective 3'(2')-O-peptidylnucleosides-5'-triphosphates.

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USSR UDC: 577.4

OKONOV, K. S., OVCHINNIKOV, V. D., GOTUA, D. A.

"Modeling a System of Variable Structure in Terms of a Buslenko Aggregate for Optimum Control of an Object Under Conditions of Interference"

Probl. sistemotekhniki--sbornik (Problems of Systems Analysis--collection of works), vyp. 1, n.p., "Sudostroyeniye", 1972, pp 134-143 (from RZh-Kibernetika, No 10, Oct 72, abstract No 10V394)

[No abstract]

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USSR UDC 537.534+535.337

GRITSYNA, V. V., KIYAN, T. S., GOUTTE, R., KOVAL, A. G., and FOGEL', YA. M., (R. Goutte affiliated with the National Institute of Applied Sciences, Lyons, France)

"Effect of Nonradiative Transitions on the Emission Spectrum of Excited Particles Knocked Out of Solid Targets by Fast Argon Ions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, No. 3, Mar 71, pp 578-584

Abstract: The effect of the resonance ionization process on the spectrum emitted by excited particles knocked out of solid targets - a metal (Cu), a semiconductor (Si), and a dielectric (Al_2O_3)-by 20 kev Ar^+ ions was studied. Results show that resonance processes of excitation loss occurring when excited particles fly off the surface of a solid have a considerable effect on the emission spectrum of particles knocked out of its surface by an ion beam. It is suggested that the location of energy levels of a solid with a known energy spectrum can be predicted on the basis of the radiation of the emission spectrum of particles knocked out of the surface of the solid by an ion beam.

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